ABSTRACT OF THE DISCLOSURE

A method and system for map based per-pixel specularity modulation of a surface in a real time 3D graphics renderer through the use of interpolated specularity function or environmental map values. One or more functional

5   modules calculate a pair of specular light intensity values or color values. Each specularity value is representative of the specular light reflected by the given pixel at an extreme surface reflectance characteristic, i.e. one may represent reflection from a very smooth surface while the other represents reflection from a very rough surface. A specularity modulation, or dirt map, value is arrived at by either a

10   procedural calculation based on surface offset coordinates or by retrieval from a two-dimensional map contained in a texture memory. The specularity modulation value is then used as a weight to interpolate the pair of specularity values. The resulting interpolated specularity value is then optionally scaled by the modulation value (or a derivative thereof) to produce a final specularity value. This final

15   specularity intensity or color value is then passed to a lighting unit that modulates pixel color appropriately to include the given specular light.